

**OPTICAL METROLOGY SYSTEM WITH COMBINED INTERFEROMETER
AND ELLIPSOMETER**

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5 ABSTRACT OF THE DISCLOSURE

An interferometer and ellipsometer are combined in a metrology tool to measure the step height of a sample, which may include transparent layers. The metrology tool includes a shared light source that provides a light beam for an interferometer and a light beam for an ellipsometer, interferometer optics which direct the light beam for an

- 10 interferometer to reflect off of a sample and ellipsometer optics which direct the light beam for an ellipsometer to reflect off a sample, and a detector element for receiving both the reflected light beam for an interferometer and the light beam for an ellipsometer. The light source may produce a single beam that is split into an interferometer and an ellipsometer beam with a beam splitter. In another embodiment, the interferometer and ellipsometer may share at least one of a polarizer, analyzer, or detector element.
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